



TOWN OF CONCORD

Planning Board

141 Keyes Road - Concord, MA - 01742

Phone: 978-318-3290

April 13, 2017

Mr. Robert Sepucha, Chairman
Concord Board of Appeals
Concord, MA 01742

Re: Recommendation to the Board of Appeals re: Application of Industrial Tower and Wireless LLC under Zoning Bylaw Sections 7.8, 11.6, and 11.8, for a Special Permit and Site Plan Approval to relocate antenna and equipment to a new 120-foot monopole telecommunications tower at **Middlesex School, 1400 Lowell Road**, (Parcel #1533).

Dear Mr. Sepucha:

At its meeting held on Tuesday, April 11, 2017, the Planning Board met with the Applicant regarding the application to the Board of Appeals for a Special Permit and Site Plan Approval for the proposed wireless tower at the Middlesex School.

The Applicant is proposing a wireless communications facility that will consist of a short gravel access driveway and leased area of 64' x 64'. This crushed stone surface compound will have a chain-link perimeter security fence, a shared emergency natural gas generator, and space for four (4) personal wireless communication service shelters or concrete pads with communications equipment, and additional supporting infrastructure. The proposed antenna tower will consist of a 120' monopole with antennas for each carrier. The current wireless carriers that will be relocated include T-Mobile, Verizon Wireless and AT&T.

In a memo dated January 25, 2017, the Middlesex School notes that when the wireless communication infrastructure was first installed on campus, it was done so on the Facilities & Operations Building and Central Steam Plant. This building was staffed by School employees and an outside security firms, twenty-four hours a day, three hundred and sixty five days per year. That building is now being renovated as the Music & Campus Center. The Music & Campus Center is not designed to accommodate the required 24x7 access to and monitoring of the wireless communication infrastructure. The Massachusetts Department of Elementary and Secondary Education maintains strict requirements regarding school employees, volunteers and contractors who may have direct and unmonitored access to children. The proposed site allows the School to maintain a distinctly separate area for wireless communication infrastructure as well as Concord Fire Department communications equipment, while maintaining the Music & Campus Center for purely academic use.

The Fire Department has no issues with the proposed site or access to the site. The Fire Department requests space on the tower for two (2) antennas and a small building with power and climate control to accommodate CFD & CPD radio equipment. This will enhance public safety for both Fire and Police Departments by helping to fill voids in the Town's radio coverage.

The Police Department has no issues with the proposed project and recommends the Applicant submit a Construction Staging and Safety Plan to ensure vehicle and pedestrian safety during construction and adequate emergency vehicle access to the Music & Campus Center. The Police Department strongly supports the request from the Fire Department regarding availability for CFD and CPD radio equipment.

The Building Commissioner and the Public Works Engineering Division have no issues or concerns with the proposed project. The Engineering Division has reviewed the stormwater drainage for the project and finds it acceptable.

CMLP has no issues or concerns with the proposed project, but notes that as the Middlesex School is primary metered, all proposed cell tower meters shall be utilized as check meters for monitoring and lease information. Per CMLP policy, no entity can re-sell electricity to a third party. Additionally, as part of the School's Music Hall Project, it is CMLP's intentions to remove existing utility poles 146-9, 146-10, 146-11, 146-12 and relocate pole 146-8 in front of the proposed cell tower outside the fence as an anchor and overhead primary dead end pole. CMLP recommends standard conditions of approval.

D. Natural Resources Division: The Natural Resources Division is preparing an Order of Conditions for issuance by the Commission on March 15, 2107.

The Planning Division has no issues or concerns with the proposed project. In response to abutter's concerns regarding property values, the Town Planner requested input from the Town Assessor. The Town Assessor has stated that the Assessing Department currently sees no reduction in value due to close proximity of cell towers.

In reviewing the application, the Planning Board took into consideration the Town Planner's report, the report from the Town's outside consultant, presentations and materials from the Applicant, and comments and materials from abutters. The Planning Board reviewed the following Sections of the Zoning Bylaw:

IV. Zoning

Section 7.8 Personal Wireless Communications Facility

7.8.4 Procedure for review by the Board: Any person who desires to construct or install a personal wireless communication facility, including co-location on an existing facility, shall submit a written application for a special permit and site plan approval to the Board, with copies to the Planning Board. The following additional information shall also be submitted:

7.8.4.1 Adequate coverage, adequate capacity and justification of need:

- (a) The applicant shall provide written documentation of any facility sites in the Town and in abutting towns in which it has a legal or equitable interest, whether by ownership, leasehold or otherwise. Said documentation shall demonstrate the following: that these facility site(s) are not already providing, or do not have the potential, by adjusting the personal wireless communication facility on the site(s), to provide adequate coverage and/or adequate capacity; that there is a significant gap in coverage; and, that the proposal reduces or eliminates the significant gap in coverage in a manner that is least intrusive upon the interests of the Town as expressed in the purpose and intent of this Section. A "gap" in coverage exists when a remote user of personal wireless communication services is unable to either connect, directly or*

indirectly, with a base station or to maintain a connection capable of supporting a reasonably uninterrupted communication. A "significant gap" depends upon the physical size of the gap and upon the number of customers affected by that gap. Documentation shall include, for each facility site listed, the exact location, ground elevation, height of tower or structure, type of antennas, antenna gain, height of antennas on tower or structure, output frequency, number of channels, power input and maximum output per channel. Potential adjustments to these existing facility sites, including changes in antenna type, orientation, gain, height or power output shall be specified. Radial plots from each of these facility sites, as they exist and with adjustments as above, shall be provided as part of the application.

The Applicant has provided the information regarding the gap in coverage with the removal of the equipment from the existing smokestack. The Town's outside consultant has validated there would be a significant gap in coverage if the smokestack site is eliminated and has found the application conforms to this section.

- (b) The applicant shall provide written documentation that they have examined all personal wireless communication facility sites located in the town and in abutting towns in which the applicant has no legal or equitable interest to determine whether those existing facility sites can be used to provide adequate coverage and/or adequate capacity. Documentation shall include all information outlined above. Radial plots from each of these facility sites as proposed shall also be provided.*

The Applicant states other campus locations were examined and rejected by the development team because of factors such as wetland impacts, zoning restrictions, coverage studies and limitations, distance from existing utilities and potential visual impacts on the community. The Town's outside consultant has found the application conforms to this section.

- (c) The applicant shall provide written documentation (including radial plots) that they have analyzed the provision of adequate coverage and adequate capacity through the use of filler sites in conjunction with all personal wireless communication facility sites listed above.*

The Applicant analyzed the use of filler sites and found it was not feasible. The Town's outside consultant has verified there are no other existing sites that would fill the gap in coverage and has found the application conforms to this section.

- (d) The applicant shall provide a map of all proposed facilities to be applied for over the next twenty (20) months (or a complete build-out analysis) by the personal wireless communication service provider. Such map shall also include any and all existing personal wireless communication facility(s) of the provider and known proposed facilities of other personal wireless communication service providers.*

The Applicant provided the required information. The Town's outside consultant has found the application conforms to this section.

- (e) The applicant shall provide written documentation that the applicant has examined potentially viable personal wireless facility sites in the overlay districts in the town and relevant sites in abutting towns that could provide adequate coverage and capacity in the town, including the existing structures and open areas that comply with the relevant zoning bylaws of those towns and are consistent with Section 7.8.1*

Purpose and Intent (a) through (e). The applicant shall list all such sites examined and state fully and completely the rationale for rejecting any such sites that are less intrusive upon the interests of the Town than the site(s) for which application is being made.

The Applicant states that the relocation of the existing Verizon, AT&T and T-Mobile antennas and equipment to the new location is the only feasible means by which the Applicant can continue to provide reliable service coverage. The Town's outside consultant has found the application conforms to this section. The Middlesex School provided additional documentation at the meeting on April 11, 2017.

7.8.4.2 General requirements:

- (a) New towers shall be set back a distance at least equal to the height of the tower from all lot lines of the site on which the tower is located, unless the tower has been designed to break away at a certain point above the ground, in which case the new tower may be set at least the breakaway distance from all lot lines.*

The proposed tower is 120 feet high and located approximately 332 feet to the closest property line. The proposed tower is in compliance with this section.

- (b) If the facility site is in a wooded area, a vegetated buffer strip of undisturbed trees shall be retained around the entire perimeter of the personal wireless communication facility site for at least the lesser of (i) the distance to the lot line or (ii) fifty (50) feet. The landowner shall enter into a recordable easement, restriction, or similar instrument enforceable by the Town to ensure that the buffer strip is retained while the facility site is in place.*

The proposed site is located in a wooded area and will have a vegetated buffer strip of undisturbed trees of approximately 316 feet to the closest property line. As a condition of approval, the property owner should be required to record a restriction that the buffer remains while the facility site is in place.

- (c) Fencing and signs: the area around the tower and communication equipment shelters shall be completely fenced for security to a height of six feet and gated (unless the communication equipment shelter is otherwise secured). Use of razor wire is not permitted. A sign shall be posted adjacent to the entry gate indicating the facility owner(s) and a 24-hour emergency telephone number and any legally required radio-frequency warning sign shall be posted in an appropriate location. Commercial advertising on any antenna, tower, fencing, accessory building or communication equipment shelter is prohibited.*

The proposed site will be enclosed by a 6-foot fence and contain appropriate signage in compliance with this requirement.

- (d) Communication equipment shelters and accessory buildings shall be designed to be architecturally similar and compatible with each other and the surrounding area. The building shall be used only for the housing of equipment related to the site. Whenever practical, the buildings shall be located underground. Additional supplemental landscape screening may be required by the Board to lessen adverse visual impacts.*

The proposed equipment shelters are between 10 and 12 feet tall, are architecturally similar to each other, and compatible with the adjacent ice rink building. The facility is located approximately 600 feet from the nearest abutting property residence. Additional supplemental landscaping screening is not needed. At the April 11, 2017 Planning Board meeting, the Applicant requested a waiver to allow the equipment shelters to be higher than the compound fence, although it does not appear this waiver is necessary. The Planning Board voted 7 to 0 to recommend this waiver **be granted** since the equipment shelters will not be visible.

- (e) *New towers shall not exceed the minimum height necessary to provide adequate coverage for the personal wireless service facilities proposed for use on the tower, unless the Board determines that co-location with another service provider is desirable, suitable and consistent with this Section. In areas where there is no significant tree canopy, the maximum height of a tower shall not exceed one-hundred-twenty (120) feet above finished grade of the ground elevation. Such finished grade shall not be distorted above the pre-existent natural grade as a way to achieve additional height.*

In areas where there is significant tree canopy, the maximum height of a tower shall not exceed twenty (20) feet above the average height of the natural pre-existent tree canopy within a one-hundred fifty (150) foot radius of the tower.

The Board may permit an increase in the height of a tower, or attachment thereto, to facilitate co-location, provided the Board determines that no material increase in visual impacts will result from the increased height, but in no case shall the height exceed one-hundred fifty (150) feet.

The design of the tower and supporting base structure shall accommodate an ultimate height of whatever is approved by the Board.

The proposed 120-foot tower is designed to accommodate four wireless carriers. The Applicant states that this height is the minimum needed by the three existing carriers to close the gaps in their respective coverage areas. The Town's outside consultant has found the application conforms to this section. The Applicant has stated that the average height of the surrounding tree canopy is 75 feet. The Applicant is requesting the Board permit an increase in the height of the tower. At the meeting on April 11, 2017, the Planning Board discussed the Applicant's request to have a tower higher than the allowed 95 feet. The Applicant presented information regarding the need for the height of 120 feet. The Applicant also indicated that if the tower were any lower than 120 feet, emergency services equipment would not have space on the tower, which the Applicant stated they would reserve the fourth available location on the tower for Concord and Carlisle emergency communication equipment. By a vote of 6 to 1, the Planning Board believes that the increase in the height of the tower to 120 feet is a material increase in the visual impacts from Lowell Road and the request should **not be granted**.

- (f) *If primary coverage from the proposed personal wireless communication facility (greater than 50%) is outside the Town of Concord, the permit may be denied unless the Applicant can show that they are unable to locate within the Town which is primarily receiving service from the proposed facility.*

The Applicant states that more than 50% of the primary coverage from the proposed facility is within the Town of Concord. The Town's outside consultant has found the application conforms to this section.

- (g) *A personal wireless communication facility proposed to be located on an existing, suitable, non-residential structure or tower for which an occupancy permit was issued as of January 1, 2001 and located within this district, shall not exceed the height of such structure by more than twenty (20) feet.*

The proposed facility is not to be located on an existing, suitable, non-residential structure. The property owner has stated that the existing wireless facility is located on a building that is now being renovated as the Music & Campus Center. The Music & Campus Center is not designed to accommodate the required 24 hour/7 days a week access to and monitoring of the wireless communication infrastructure. The Massachusetts Department of Elementary and Secondary Education maintains strict requirements regarding school employees, volunteers and contractors who may have direct and unmonitored access to children.

- (h) *Unless required by the Federal Aviation Administration or Emerson Hospital mediflight program, no exterior night lighting of towers or the personal wireless communication facility is permitted except for manually operated emergency lights for use when operating personnel are on site.*

The FAA has determined that markings or lighting is not required for the proposed tower.

- (i) *A personal wireless communication facility subject to jurisdiction by the Federal Aviation Administration (FAA) shall be designed to minimize, to the extent feasible, adverse visual effects upon existing single-family detached dwellings and historic or scenic viewsheds. No new tower that requires striping or lighting per FAA requirements shall be located within one-thousand (1000) feet of an existing school, day care center, single-family detached dwelling or historic resource.*

The proposed facility has received from the FAA a letter of Determination of No Hazard To Air Navigation.

- (j) *No new tower for a personal wireless communication facility shall be located within:*

- i. *One-thousand (1000) feet, on a horizontal plane, to any existing structure which is, or is able to be, occupied or habitable on the property of any existing child care facility or school;*

The Applicant is requesting a waiver to this requirement since the property owner is a school. The Town's outside consultant states that since this tower is a replacement of an existing structure and the Middlesex School has identified the only viable new location, he feels this unique situation allows for relief to be granted. The Planning Board voted 7 to 0 to recommend this waiver **be granted** since the property owner is a school and they have authorized the filing of the application.

- ii. *One thousand (1000) feet, on a horizontal plane, to the structure of an existing single-family detached dwelling;*

The proposed tower is located approximately 600 feet from an abutting property existing single family detached dwelling. The Applicant is requesting a waiver to this requirement, stating that the site is necessary to provide adequate coverage. The Town's outside consultant states that since this tower is a replacement of an existing structure and the Middlesex School has identified the only viable new location, he feels this unique situation allows for relief to be granted. The Planning Board believes that further investigation into other potential sites that meet this requirement is required. The Planning Board voted 7 to 0 to recommend this waiver **not be granted**.

- iii. *One thousand (1000) feet, on a horizontal plane, to any structure in an Historic District, or listed, or eligible to be listed, on the state or federal Register of Historic Places;*

The proposed facility is not located within a historic district or within 1,000 feet of a listed state or federal Register of Historic Places. The Massachusetts Historical Commission has issued an opinion that the Middlesex School campus is eligible to be listed on the state Register of Historic Places. The Applicant states that the project site is located on a modern portion of the campus, behind the modern ice rink facility. The Planning Board voted 7 to 0 to recommend this waiver **be granted** since it is the Middlesex School campus that is eligible and the School has authorized the filing of the application.

- iv. *Town, Massachusetts, or federally regulated bordering vegetated wetland;*

This site is not located within a Town, state or federally regulated bordering vegetated wetland.

- v. *a Massachusetts certified vernal pool;*

This site is not located within a state certified vernal pool.

- vi. *the habitat of any Massachusetts listed rare or endangered wildlife or rare plant species;*

This site is not located within the habitat of a state listed rare or endangered wildlife or rare plant species.

- (k) *New personal wireless communication facilities in or on an existing, suitable, non-residential structure or tower for which an occupancy permit was issued as of January 1, 2000 shall be located at least:*

- i. *five hundred (500) feet, on a horizontal plane, from any existing structure which is, or is able to be, occupied or habitable on the property of a child care facility or school;*
- ii. *three hundred (300) feet, on a horizontal plane, from the structure of an existing single-family detached dwelling; or*
- iii. *three hundred (300) feet, on a horizontal plane, from any structure in a Historic District or listed (or eligible to be listed) on the State or Federal Register of Historic Places.*

The proposed facility is not being located on an existing non-residential structure.

(l) The following locations are ranked in order of preference and are encouraged:

- i. personal wireless communication facility sites that are most distant from single-family detached dwellings and schools.*

The proposed site is located approximately 600 feet from an abutting properties single family detached dwelling. The Applicant reviewed other campus locations that were not selected because of factors such as wetland impacts, they were outside the Wireless Overlay District, did not provide adequate coverage, were too far from existing utilities or would have a greater visual impact on the community. The Planning Board believes that further investigation into other potential sites that meet this requirement is required.

- ii. municipal lands which comply with other requirements of this section.*

There are no suitable municipal lands within the Wireless Overlay District in this area.

- iii. where the visual impact of towers can be minimized by the use of camouflage, stealth design or other innovative measures to reduce, eliminate or disguise the negative visual impact.*

The Applicant has not proposed the use of camouflage or stealth design. The Applicant has provided visual documentation from the balloon/crane test. The Planning Board discussed whether there is a need to minimize the impact through the use of camouflage, stealth design or other innovative measure. The Applicant noted that the facility is painted a color that best blends in with the skyline and believes that the proposed tower does not have a significant negative visual impact for which the use of stealth design or other innovative measures would be helpful.

- iv. filler sites to provide adequate coverage without requiring new towers.*

The Town's outside consultant has confirmed that there are no existing filler sites to provide adequate coverage without requiring new towers.

- v. existing personal wireless communication facility(s).*

There are no existing personal wireless communication facilities in the area. The School has provided a statement as to why the existing facilities on the smokestack have to be removed.

(m) Personal wireless communication facilities shall be located so as to provide adequate coverage and adequate capacity with the fewest number of base stations, towers and antenna arrays that are technically feasible. The Board may limit the number of base stations, towers and antenna arrays upon any single parcel. The Board may limit the number of base stations, towers and antenna arrays in any given overlay district.

The proposed tower is the only facility on this parcel and the only facility within this section of the Wireless Overlay District. The Town's outside consultant has found the application conforms to this section.

(n) Subsequent applicants are required to co-locate and shall submit an application to add to existing towers, installed under the provisions of this Bylaw.

There are three existing carriers that will be located on the proposed tower with the option for one additional carrier. At the April 11, 2017 Planning Board meeting, the Applicant stated they would reserve the fourth available location on the tower for Concord and Carlisle emergency communication equipment.

- (o) *The Board shall request input from the Fire, Police and other town emergency services regarding the adequacy for emergency access to the site.*

There is adequate emergency access to the site.

- (p) *Balloon test: Within 35 days of submitting an application, the applicant shall arrange to fly, or raise upon a temporary mast, a three foot diameter brightly colored balloon at the maximum height and at the location of the proposed tower. The date(s) (including a second date, in case of poor visibility on the initial date), times and location of the balloon test shall be advertised, by the applicant at seven (7) and fourteen (14) days in advance of the first test date in a newspaper with a general circulation in the Town. The applicant shall inform the Board and the Planning Board in writing of the dates and times of the test at least fourteen days in advance. The balloon shall be flown for at least five consecutive hours between 7:00 a.m. and 5:00 p.m. on the date(s) chosen. The applicant shall bear any and all expenses associated with such balloon test.*

The applicant conducted the balloon/crane test on December 30, 2016. The Applicant has submitted an affidavit from the crane operator verifying the height of the crane. The Applicant has provided visual documentation from the balloon/crane test, noting that the crane was located approximately 110 feet from the proposed tower location. This was due to the forested location of the proposed tower, the existing power lines along the road and the inability of having the crane block the roadway and emergency vehicle access to that area of the campus for five consecutive hours.

7.8.4.3 Evaluation by independent consultants: Upon submission of a complete application for a special permit under this Section, the Board shall engage the services of a qualified independent consultant and shall provide the independent consultant with the completed application and existing documentation for analysis and review. The independent consultant shall gather additional documentation and conduct additional research as necessary to support the analysis and review. Access to the site to conduct any necessary site visits shall be provided to the qualified independent consultant. The qualified independent consultant shall submit to the Board a written recommendation and an opinion as to the conformance of the application with the requirements of this Section.

The Town's outside consultant has reviewed the application and found it conforms with the requirements of the Bylaw.

7.8.4.4 Fees and insurance: Personal wireless service facilities shall be continuously insured by the owner(s) against damage to persons or property. The owner(s) shall provide a Certificate of Insurance to the Building Inspector on an annual basis in which the Town shall be specifically listed as an additional insured. A schedule of fees for personal wireless service facilities permitting and renewal, any monitoring of emissions and inspection of structures, and any other fees shall be established by the Board as part of the Rules and Regulations for Personal Wireless Communication Facility(s).

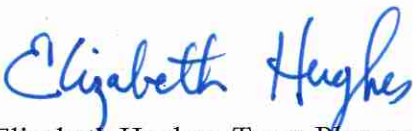
The Applicant should be required to provide the Certificate of Insurance as a condition of approval.

7.8.4.5 Relief from general requirements: The Board may, upon advice of the Planning Board and a qualified independent consultant, grant relief from the general requirements contained in subsection 7.8.4.2 (rather than require an applicant to seek a variance from this Bylaw) where the Board finds that the relief is supported by the submittal of a study prepared by a qualified technical consultant showing a significant gap in coverage, where the Board finds that the extent of the granted relief is mitigated by a showing that the project provides a minimally intrusive viable means of reducing or eliminating such significant gap in coverage, and where the Board finds that the desired relief may be granted without substantial detriment to the neighborhood and without derogating from the intent and purpose of this Bylaw. However, the Board shall not grant relief from the maximum height limitation in subsection 7.8.4.2(e). The Board shall be empowered to grant relief from any setback requirement in subsection 7.8.4.2(i), (j) or (k) provided that the site proposed is demonstrated to be necessary to achieve adequate coverage or capacity and to be minimally intrusive upon the interests of the Town, consistent with Section 7.8.1 Purpose and Intent (a) through (e). The applicant shall provide the Board with a written statement describing why the requested relief is in the best interest of the Town with references to Section 7.8.1 Purpose and Intent (a) through (e)."

The Applicant has provided a written statement describing why the requested relief is in the best interest of the Town. The Town's outside consultant believes that the requested waiver can be granted. The Planning Board has recommended that the waiver to the 1,000-foot setback from a residence not be granted and that the Zoning Board of Appeals not grant a tower height greater than 20 feet above the 75-foot average tree canopy height.

Please contact me if you have any questions or require further clarification.

On behalf of the Concord Planning Board,



Elizabeth Hughes, Town Planner

cc: Middlesex School, c/o Matthew Crozier, COO, 1400 Lowell Road, Concord, MA 01742
Industrial Tower and Wireless, LLC, c/o Thomas Lennon, VP, 40 Lone Street, Marshfield, MA 02050
Building Division
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